



















FIGURE 10

FIGURE 10A

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
At1g08660/F22O13.14	Arabidopsis thaliana	n.d.	AC003981 AAF99778.1 AY064135 AAL36042.1 AY124807 AAM70516.1 NC_003070 NP_172342.1 NM_180609 NP_850940.1	Q8VZJ0 Q9FRR9	
α -2,3-sialyltransferase (ST3GAL-IV)	Bos taurus	n.d.	AJ584673 CAE48298.1		
α -2,6-sialyltransferase (Slat7b)	Bos taurus	n.d.	AJ620651 CAF05850.1		
α -2,8-sialyltransferase (Slat8D)	Bos taurus	n.d.	AJ699421 CAG27883.1		
CMP α -2,6-sialyltransferase (ST6Gal I)	Bos taurus	2.4.99.1	Y15111 CAA75385.1 NM_177517 NP_803483.1	O18974	
sialyltransferase ST3Gal-II (Slat4B)	Bos taurus	n.d.	AJ748841 CAG44450.1		
sialyltransferase ST3Gal-VI (Slat10)	Bos taurus	n.d.	AJ748843 CAG44452.1		
ST6GalNAc-VI	Bos taurus	n.d.	AJ620949 CAF06586.1		
polysialyltransferase (PST) (fragment) ST8Sia IV	Cercopithecus aethiops	2.4.99.-	AF210729 AAF17105.1	Q9TT09	
α -2,3-sialyltransferase ST3Gal I (Slat4)	Clona intestinalis	n.d.	AJ626815 CAF25173.1		
α -2,8-polysialyltransferase ST8Sia IV	Cricetulus griseus	2.4.99.-	-AAE28634 Z46801 CAA86822.1	Q64690	
Gal β 1,3/4-GlcNAc α -2,3-sialyltransferase St3Gal II (fragment)	Cricetulus griseus	n.d.	AY266676 AAP22943.1	Q80WK9	
α -2,3-sialyltransferase ST3Gal II (Slat5)	Danio rerio	n.d.	AJ783741 CAH04018.1		
α -2,3-sialyltransferase ST3Gal IV (Slat4c)	Danio rerio	n.d.	AJ744809 CAG32845.1		

FIGURE 9B

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
α -2,6-sialyltransferase ST6Gal I (Slat1)	<i>Danio rerio</i>	n.d.	AJ744801	CAG32837.1	1A67456CAH010.PDB
α -2,6-sialyltransferase ST6GalNAc V (Slat7E) (fragment)	<i>Danio rerio</i>	n.d.	AJ646874	CAG26703.1	1A67456CAH010.PDB
α -2,8-sialyltransferase ST8Sia I (Slat 8A) (fragment)	<i>Danio rerio</i>	n.d.	AJ715535	CAG29374.1	1A67456CAH010.PDB
α -2,8-sialyltransferase ST8Sia IV (Slat 8D) (fragment)	<i>Danio rerio</i>	n.d.	AJ715545	CAG29384.1	1A67456CAH010.PDB
α -2,8-sialyltransferase ST8Sia VI (Slat 8F) (fragment)	<i>Danio rerio</i>	n.d.	AJ715551	CAG29390.1	1A67456CAH010.PDB
N -glycan α -2,8-sialyltransferase ST6Gal I	<i>Danio rerio</i>	n.d.	BC050483	AAH50483.1	Q7ZU51
			AY055462	AAL17875.1	Q8QH83
			NM_153662	NP_705948.1	
ST3Gal-IV related	<i>Danio rerio</i>		BC059179	AAH50483.1	Q7ZU51
			AJ524720	CAA56666.1	Q11200
			NM_205217	NP_990548.1	
ST3Gal-V	<i>Danio rerio</i>	n.d.	AJ619960	CAFO4061.1	
ST6GalNAc VI	<i>Danio rerio</i>	n.d.	BC060909	AAH50483.1	Q7ZU51
			AJ524720	CAA56666.1	Q11200
α -2,6-sialyltransferase (CG4871) ST6Gal I	<i>Drosophila melanogaster</i>	2.4.99.1	AE003465	AAF47256.1	Q9GU23
			AF218237	AAG13185.1	Q9W121
			AF397532	AAK92126.1	
			AE003465	AAM70791.1	
			NM_079129	NP_523853.1	
			NM_166684	NP_726474.1	
α -2,3-sialyltransferase ST3Gal I	<i>Gallus gallus</i>	2.4.99.4	X80503	CAA56666.1	Q11200
			NM_205217	NP_990548.1	
α -2,3-sialyltransferase (ST3GAL-IV) (fragment)	<i>Gallus gallus</i>	n.d.	AJ585761	CAE51385.2	
α -2,6-sialyltransferase ST6Gal I	<i>Gallus gallus</i>	2.4.99.1	X75558	CAA53235.1	Q92182
			NM_205241	NP_990572.1	
α -2,6-sialyltransferase ST6Gal I	<i>Gallus gallus</i>	2.4.99.-	X77775	AAE08030.1	Q92184
			NM_205233	CAA54813.1	
			NP_990564.1		
α -2,6-sialyltransferase ST6GalNAc II	<i>Gallus gallus</i>		ANG32456	CAA56666.1	
			NM_205240	NP_990572.1	
			NM_205240	NP_990572.1	

FIGURE 10B

FIGURE 9C

Protein	Organism	EC#	GenBank / GenPept	SwissProt / 3D	PDB
α -2,6-sialyltransferase ST6GalNAc V (SIAT7E) (fragment)	<i>Gallus gallus</i>	n.d.	AJ646877 CAG26706.1		
α -2,6-sialyltransferase (SIAT7E)	<i>Gallus gallus</i>	n.d.	AJ646877 CAG26706.1		P79783
α -2,8-sialyltransferase (SIAT8B)	<i>Gallus gallus</i>	n.d.	AJ699419 CAG27881.1		
α -2,8-sialyltransferase (SIAT8C)	<i>Gallus gallus</i>	n.d.	AJ699420 CAG27882.1		
α -2,8-sialyltransferase (SIAT8F)	<i>Gallus gallus</i>	n.d.	AJ699424 CAG27886.1		
β -galactosamide α -2,6- sialyltransferase II (ST6Gal II)	<i>Gallus gallus</i>	n.d.	AJ627629 CAF29497.1		
α -2,6-sialyltransferase polysialyltransferase ST8Sia IV	<i>Gallus gallus</i>	2.4.99.-	AF008194 AAB95120.1	O42399	
α -2,3-sialyltransferase ST3Gal II	<i>Homo sapiens</i>	2.4.99.4	U83090 AAB40389.1 BC036777 AAH36777.1 X96667 CAA65447.1 NM_006927 NP_008858.1	Q16842 O00654	
α -2,3-sialyltransferase ST3Gal II (fragment)	<i>Homo sapiens</i>				

FIGURE 10D

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
α -2,3-sialyltransferase ST3Gal IV	<i>Homo sapiens</i>	2.4.99.-	L23767 AAA16460.1 AF036249 AAC14162.1 BC010845 AAH10845.1 AY040826 AAK93790.1 AF516602 AAM66431.1 AF516603 AAM66432.1 AF516804 AAM66433.1 AF525084 AAM81378.1 X74570 CAA52662.1 CR456858 CAG33139.1 NM_006278 NP_006269.1	Q11206 Q60497 Q96QQ9 Q8N6A6 Q8N6A7 Q8NFD3 Q8NFG7 X74570 CAA52662.1 CR456858 CAG33139.1 NM_006278 NP_006269.1	
α -2,6-sialyltransferase (ST6Gal II ; KIAA1877)	<i>Homo sapiens</i>	n.d.	BC008680 AAH08680.1 AB058780 BAB47506.1 AB059555 BAC24793.1 AJ512141 CAD54408.1 AX795193 CAE48260.1 AX795193 CAE48261.1 NM_032528 NP_115917.1	Q86Y44 Q8IUG7 Q96HE4 Q96JF0 AX795193 CAE48260.1 AX795193 CAE48261.1 NM_032528 NP_115917.1	
α -2,6-sialyltransferase (ST6GalNAc II)	<i>Homo sapiens</i>	n.d.	BC001201 AAH01201.1 AK056241 BAB71127.1 AL035409 CAB72344.1 AJ507292 CAD45372.1 NM_030965 NP_112227.1	Q9BVH7 AK056241 BAB71127.1 AL035409 CAB72344.1 AJ507292 CAD45372.1 NM_030965 NP_112227.1	
α -2,6-sialyltransferase (ST6GalNAc V)	<i>Homo sapiens</i>	n.d.	BC001201 AAH01201.1 AK056241 BAB71127.1 AL035409 CAB72344.1 AJ507292 CAD45372.1 NM_030965 NP_112227.1	Q9BVH7 AK056241 BAB71127.1 AL035409 CAB72344.1 AJ507292 CAD45372.1 NM_030965 NP_112227.1	
α -2,6-sialyltransferase ST6Gal I	<i>Homo sapiens</i>	2.4.99.1	BC031476 AAH31476.1 BC040009 AAH40009.1 A17362 CAA01327.1 A23699 CAA01686.1 X17247 CAA35111.1 X54363 CAA38246.1 X62822 CAA44634.1 NM_003032 NP_003023.1 NM_173216 NP_775323.1	P15907 BC040009 AAH40009.1 A17362 CAA01327.1 A23699 CAA01686.1 X17247 CAA35111.1 X54363 CAA38246.1 X62822 CAA44634.1 NM_003032 NP_003023.1 NM_173216 NP_775323.1	
α -2,6-sialyltransferase ST8Sia IV	<i>Homo sapiens</i>	2.4.99.-	L41680 AAC41775.1 BC027866 AAH27866.1 BC053657 AAH53657.1 NM_005668 NP_005659.1	Q8N1F4 Q92187 Q92693 NM_005668 NP_005659.1	
α -2,6-sialyltransferase (ST6GalNAc II)	<i>Homo sapiens</i>	2.4.99.1	L29556 AAA36613.1	Q92186	

FIGURE 10E

Protein	Organism	EC#	GenBank / GenPept	SwissProt / 3D	PDB
ST8Sia II			U82762 AAB51242.1 U33551 AAC24458.1 BC089584 AAH89584.1 NM_006011 NP_006002.1	Q92470 Q92746	
α -2,8-sialyltransferase					
ST8Sia V	<i>Homo sapiens</i>	2.4.99.-	U91641 AAC51727.1 CR457037 CAG33318.1 NM_013305 NP_037437.1	O15466	
lactosylceramide α -2,3-sialyltransferase (ST3Gal V)	<i>Homo sapiens</i>	2.4.99.9	AF105026 AAD14634.1 AF119415 AAF66146.1 BC065936 AAH65936.1 AY152815 AAO16866.1 AAP65066 AAP65066.1 AY359105 AAQ89463.1 AB018356 BAA33950.1 AX876536 CAE89320.1 NM_003896 NP_003887.2	Q9UNP4 O94902	
α -2,6-sialyltransferase (ST6GalNAC IV)					
<i>N</i> -acetylgalactosaminide α -2,6-sialyltransferase IV (ST6GalNAc IV)	<i>Homo sapiens</i>	2.4.99.-	AF127142 AAF00102.1 BC036705 AAH36705.1 -AAP63349.1 AB035172 BAA87034.1 AK000600 BAA91281.1 Y17461 CAB44354.1 AJ271734 CAC07404.1 AX061620 CAC24981.1 AX068265 CAC27250.1 AX969252 CAF14380.1 NM_014403 NP_055218.3 NM_175039 NP_778204.1	Q9H4F1 Q9NWU6 Q9UKU1 Q9ULB9 Q9Y3G3 Q9Y3G4	
ST6Sia V (fragment)					
unnamed protein product	<i>Homo sapiens</i>	n.d.	AK021929 BAB13940.1 AX881696 CAE91353.1	Q9HAA9	
GalCer: α -GlcNAc α -2-sialyltransferase					

FIGURE 35 10 P

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
Gal β -1,3/4-GlcNAc α -2,3-sialyltransferase (ST3Gal IV)	<i>Mesocricetus auratus</i>	2.4.99.6	AJ245700 CAB53395.1	Q9QXF5	
polysialyltransferase (ST8Sia IV)	<i>Mesocricetus auratus</i>	2.4.99.-	AJ245701 CAB53396.1	Q9QXF4	
α -2,3-sialyltransferase ST3Gal II	<i>St3gal2</i> <i>Mus musculus</i>	2.4.99.4	BC015264 AAH15264.1 BC066064 AAH66064.1 AK034554 BAC28752.1 AK034863 BAC28859.1 AK053827 BAC35543.1 X76989 CAA54294.1 NM_009179 NP_033205.1 NM_178048 NP_835149.1	Q11204 Q8BPL0 Q8BSA0 Q8BSE9 Q91WH6 X76989 CAA54294.1 NM_009179 NP_033205.1 NM_178048 NP_835149.1	
α -2,3-sialyltransferase ST3Gal IV	<i>St3gal4</i> <i>Mus musculus</i>	2.4.99.4	BC011121 AAH11121.1 BC050773 AAH50773.1 D28941 BAA08068.1 AK008543 BAB25732.1 AB061305 BAB47508.1 X95809 CAA65076.1 NM_009178 NP_033204.2	P97354 Q61325 Q91Y74 Q921R5 Q9CVE8 X95809 CAA65076.1 NM_009178 NP_033204.2	
α -2,6-sialyltransferase ST6GalNAc II	<i>St6galnac2</i> <i>Mus musculus</i>	2.4.99.-	NM_009180 6677963 BC010208 AAH10208.1 AB027198 BAB00637.1 AK004613 BAB23410.1 X93999 CAA63821.1 X94000 CAA63822.1 NM_009180 NP_033206.2	P70277 Q9DC24 Q9JJM5 X93999 CAA63821.1 X94000 CAA63822.1 NM_009180 NP_033206.2	
α -2,6-sialyltransferase ST6Gal II	<i>St6gal2</i> <i>Mus musculus</i>	n.d.	AK082586 BAC38534.1 AB095093 BAC87752.1 AK129482 BAC98272.1 NM_172829 NP_766417.1	Q8BUU4 Q9DC24 Q9JJM5 X93999 CAA63821.1 X94000 CAA63822.1 NM_009180 NP_033206.2	
α -2,6-sialyltransferase ST6GalNAc III	<i>St6galnac3</i> <i>Mus musculus</i>	n.d.	BC058387 AAH58387.1 AK034804 BAC28836.1 Y11342 CAA72181.2 Y11343 CAB95031.1 NM_011372 NP_035502	Q9WUV2 Q9JHP5 Y11342 CAA72181.2 Y11343 CAB95031.1 NM_011372 NP_035502	
α -2,6-sialyltransferase ST6GalNAc IV	<i>St6galnac4</i> <i>Mus musculus</i>	n.d.	BC050774 AAH50774.1 AK085730 BAC38524.1 AK085731 BAC38525.1 Y11374 CAA72182.1 Y11375 CAB43697.1	Q9WUV2 Q9JHP5 Y11374 CAA72182.1 Y11375 CAB43697.1	

FIGURE 95 LOG

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB
α -2,8-sialyltransferase (GD3 synthase) ST8Sia I	<i>St8sia1</i> <i>Mus musculus</i>	2.4.99.8	L38677 AAA91869.1 BC024821 AAH24821.1 AK046188 BAC32625.1 AK052444 BAC34994.1 X84235 CAA59014.1 AJ401102 CAC20706.1 NM_011374 NP_035504.1	Q64468 Q64687 Q8BL76 Q8BW10 Q8K1C1 Q9EPK0	1/3D Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 NM_011374 NP_035504.1
α -2,8-sialyltransferase ST8Sia II	<i>St8sia2</i> <i>Mus musculus</i>	2.4.99.-	X83562 CAA58548.1 X99646 CAA67965.1 X99647 CAA67965.1 X99648 CAA67965.1 X99649 CAA67965.1 X99650 CAA67965.1 X99651 CAA67965.1 NM_009181 NP_033207.1	O35696	Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 NM_009181 NP_033207.1
α -2,8-sialyltransferase ST8Sia V	<i>St8sia5</i> <i>Mus musculus</i>	2.4.99.-	BC034855 AAH34855.1 AK078670 BAC37354.1 X98014 CAA66642.1 X98014 CAA66643.1 X98014 CAA66644.1 NM_013666 NP_038694.1 NM_153124 NP_694764.1 NM_177416 NP_803135.1	P70126 P70127 P70128 Q8BJW0 Q8JZQ3	Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 NM_013666 NP_038694.1 NM_153124 NP_694764.1 NM_177416 NP_803135.1
GD1 synthase (ST6GalNAc V)	<i>St6galnac5</i> <i>Mus musculus</i>	n.d.	BC055737 AAH55737.1 AB030836 BAA85747.1 AB028840 BAA89292.1 AK034387 BAC28693.1 AK038434 BAC29997.1 AK042683 BAC31331.1 NM_012028 NP_036158.2	Q8CAM7 Q8CBX1 Q9QYJ1 Q9R0K6	Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 NM_012028 NP_036158.2
α -2,6-sialyltransferase (ST6GalNAc VI)	<i>St6galnac6</i> <i>Mus musculus</i>	2.4.99.-	BC036985 AAH36985.1 AB035174 BAA87036.1 AB035123 BAA95940.1 AK030648 BAC27064.1 NM_016973 NP_058669.1	Q8CDC3 Q8JZW3 Q9JM95 Q9R0G9	Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 Y19554 NP_009941.1 NM_016973 NP_058669.1
α -2,3-sialyltransferase	<i>Oncorhynchus</i>	n.d.	AJ585760 CAE51384.1		

FIGURE 51 10 H

Protein	Organism	EC#	GenBank / GenPept	SwissProt / 3D	PDB
(St3Gal-I)	<i>mykiss</i>				
α-2,6-sialyltransferase	<i>Oncorhynchus mykiss</i>	n.d.	AB094402 BAC77411.1	Q7T2X5	
α-2,8-polysialyltransferase IV (ST8Sia IV)	<i>Oncorhynchus mykiss</i>		AB094403 BAC77411.1		
α-2,3-sialyltransferase ST3Gal IV	<i>Oryctolagus cuniculus</i>	2.4.99.-	AF121967 AAF28871.1	Q9N257	
OSJNBa0043L24.2 or OSJNBb0002J11.9	<i>Oryza sativa (japonica cultivar-group)</i>	n.d.	AL731626 CAD41185.1 AL682969 CAE04714.1		
α-2,6-sialyltransferase ST6GalNAc V (Slat7E) (fragment)	<i>Oryzias latipes</i>	n.d.	AJ646876 CAG26705.1		
α-2,3-sialyltransferase ST3Gal II (Slat5)	<i>Pan troglodytes</i>	n.d.	AJ744804 CAG32840.1		
α-2,3-sialyltransferase ST3Gal IV (Slat4c)	<i>Pan troglodytes</i>	n.d.	AJ626824 CAF25182.1		
α-2,6-sialyltransferase Slat7A	<i>Pan troglodytes</i>	n.d.	AJ748740 CAG38615.1		
α-2,6-sialyltransferase ST6GalNAc III (Slat7C)	<i>Pan troglodytes</i>	n.d.	AJ748741 CAG38616.1		
α-2,6-sialyltransferase ST6GalNAc V (Slat7E)	<i>Pan troglodytes</i>	n.d.	AJ634454 CAG25676.1		
α-2,6-sialyltransferase ST6GalNAc V (Slat7E)	<i>Pan troglodytes</i>	n.d.	AJ646875 CAG26704.1		
α-2,8-sialyltransferase 8A (Slat8A)	<i>Pan troglodytes</i>	2.4.99.8	AJ697658 CAG26896.1		
α-2,8-sialyltransferase 8B (Slat8B)	<i>Pan troglodytes</i>	n.d.	AJ697659 CAG46897.1		
α-2,8-sialyltransferase 8C (Slat8C)	<i>Pan troglodytes</i>	n.d.	AJ697660 CAG26898.1		
α-2,8-sialyltransferase 8D (Slat8D)	<i>Pan troglodytes</i>	n.d.	AJ697661 CAG26899.1		
α-2,8-sialyltransferase 8E (Slat8E)	<i>Pan troglodytes</i>	n.d.	AJ697662 CAG26900.1		
β-galactosamide α-2,6-sialyltransferase I (ST6Gal I; Slat1)	<i>Pan troglodytes</i>	2.4.99.1	AJ627624 CAF29492.1		
β-galactosamide α-2,6-sialyltransferase II (ST6Gal II; Slat2)	<i>Pan troglodytes</i>	n.d.	AJ627625 CAF29493.1		
GM3 synthase ST3Gal V	<i>Pan troglodytes</i>	n.d.	AJ744807 CAG29942.1		

FIGURE 9 10^T

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
(Slat9)					
α -2,3-sialyltransferase ST3Gal III	<i>Rattus norvegicus</i>	2.4.99.6	M97754 AAA42146.1 NM_031697 NP_113885.1	Q02734	
α -2,3-sialyltransferase ST3Gal VI	<i>Rattus norvegicus</i>	n.d.	AJ626743 CAF25053.1		
α -2,6-sialyltransferase ST6Gal I	<i>Rattus norvegicus</i>	2.4.99.1	M18769 AAA41196.1 M83143 AAB07233.1	P13721	
α -2,6-sialyltransferase ST6GalNAc II (Slat7B)	<i>Rattus norvegicus</i>	n.d.	AJ634457 CAG25679.1		
α -2,6-sialyltransferase ST6GalNAc IV (Slat7D) (fragment)	<i>Rattus norvegicus</i>	n.d.	AJ646871 CAG26700.1		
α -2,6-sialyltransferase ST6GalNAc VI (Slat7F) (fragment)	<i>Rattus norvegicus</i>	n.d.	AJ646881 CAG26710.1		
α -2,8-sialyltransferase (SIAT8E)	<i>Rattus norvegicus</i>	n.d.	AJ699422 CAG27884.1		
α -2,8-sialyltransferase ST8Sia II	<i>Rattus norvegicus</i>	2.4.99.	L13445 AAA42147.1 NM_057156 NP_476497.1	Q07977 Q64688	
α -2,8-sialyltransferase ST8Sia IV	<i>Rattus norvegicus</i>	2.4.99.	U90215 AAB49989.1	O08563	
β -galactosamidase					
Sialyltransferase (SIAT8)					
GM3 synthase ST3Gal V	<i>Rattus norvegicus</i>	n.d.	AB018049 BAA33492.1 NM_031337 NP_112627.1	O88830	
α -2,3-sialyltransferase ST3Gal-III	<i>Rattus norvegicus</i>	n.d.	AU719840 CAG27887.1		
α -2,3-sialyltransferase (SI3Gal-II)	<i>Silurana tropicalis</i>	n.d.	AJ585763 CAE51387.1		
α -2,6-sialyltransferase (SI6GalNAc)	<i>Silurana tropicalis</i>	n.d.	AJ620610 CAE50589.1		
α -2,3-sialyltransferase (ST3GAL-IV)	<i>Sus scrofa</i>	n.d.	AJ584674 CAE48299.1		
α -2,6-sialyltransferase (fragment) ST6Gal I	<i>Sus scrofa</i>	2.4.99.1	AF136746 AAD33059.1	Q9XSG8	
β -galactosamidase α -2,6-sialyltransferase (SI6GalNAc)	<i>Sus scrofa</i>	n.d.	AF041031 AAC15633.1	O62717	

FIGURE 93 10J

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
α -2,3-sialyltransferase (Slat5-r)	<i>Takifugu rubripes</i>	n.d.	AJ744805 CAG32841.1		
α -2,3-sialyltransferase (Slat5)	<i>Takifugu rubripes</i>	n.d.	AJ626816 CAG25174.1		
α -2,3-sialyltransferase ST3Gal II (Slat5) (fragment)	<i>Takifugu rubripes</i>	n.d.	AJ626817 CAF25175.1		
α -2,6-sialyltransferase ST6Gal I (Slat1)	<i>Takifugu rubripes</i>	n.d.	AJ744800 CAG32836.1		
α -2,6-sialyltransferase ST6GalNAc I (Slat7)	<i>Takifugu rubripes</i>	n.d.	AJ634461 CAG25682.1		
α -2,6-sialyltransferase ST6GalNAc II B (Slat7B-related)	<i>Takifugu rubripes</i>	n.d.	AJ634462 CAG25681.1		
α -2,6-sialyltransferase ST6GalNAc IV (slat7D) (fragment)	<i>Takifugu rubripes</i>	2.4.99.3	Y17466 CAB44338.1	Q9W6U6	AJ646869 CAG26698.1
α -2,6-sialyltransferase ST6GalNAc VI (Slat7F) (fragment)	<i>Takifugu rubripes</i>	n.d.	AJ646880 CAG26709.1		
α -2,8-sialyltransferase ST8Sia II (Slat 8B) (fragment)	<i>Takifugu rubripes</i>	n.d.	AJ715538 CAG29377.1		
α -2,8-sialyltransferase ST8Sia III (Slat 8C) (fragment)	<i>Takifugu rubripes</i>	n.d.	AJ715539 CAG29380.1		
α -2,8-sialyltransferase ST8Sia IIIr (Slat 8Cr) (fragment)	<i>Takifugu rubripes</i>	n.d.	AJ715542 CAG29381.1		
α -2,8-sialyltransferase ST8Sia VI (Slat 8F) (fragment)	<i>Takifugu rubripes</i>	n.d.	AJ715549 CAG29388.1		
α -2,3-sialyltransferase ST8Sia VII (Slat 8E) (fragment)	<i>Tetraodon nigroviridis</i>	n.d.	AJ715550 CAG29389.1		
α -2,3-sialyltransferase ST3Gal I (Slat6)	<i>Tetraodon nigroviridis</i>	n.d.	AJ744802 CAG32831.1		
α -2,3-sialyltransferase ST3Gal III (Slat6)	<i>Tetraodon nigroviridis</i>	n.d.	AJ626822 CAF25180.1		
α -2,6-sialyltransferase ST6GalNAc I (Slat7B)	<i>Tetraodon nigroviridis</i>	n.d.	AJ634462 CAG25683.1		
α -2,6-sialyltransferase ST6GalNAc V (Slat7E) (fragment)	<i>Tetraodon nigroviridis</i>	n.d.	AJ646879 CAG26708.1		
α -2,6-sialyltransferase ST8Sia I (Slat 8A) (fragment)	<i>Tetraodon nigroviridis</i>	n.d.	AJ715536 CAG29376.1		
α -2,6-sialyltransferase ST8Sia II (Slat 8B) (fragment)	<i>Tetraodon nigroviridis</i>	n.d.	AJ715537 CAG29376.1		
α -2,6-sialyltransferase ST8Sia III (Slat 8C) (fragment)	<i>Tetraodon nigroviridis</i>	n.d.	AJ715539 CAG29378.1		

FIGURE 9K 10K

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
ST8Sia II (Slat8Cr) (fragment)	<i>Tetraodon nigroviridis</i>	n.d.	AJ715540 CAG29379.1		
α -2,8-sialyltransferase ST8Sia IIIr (Slat 8Cr) (fragment)	<i>Tetraodon nigroviridis</i>	n.d.	AJ715541 CAG29379.1		
α -2,3-sialyltransferase ST3Gal-I (Slat 3Cr) (fragment)	<i>Xenopus laevis</i>	n.d.	AJ585762 CAF51386.1		
α -2,3-sialyltransferase ST3Gal-II (Slat 3Cr) (fragment)	<i>Xenopus laevis</i>	n.d.	AJ585763 CAF51387.1		
α -2,3-sialyltransferase ST3Gal-III (Slat6) (fragment)	<i>Xenopus laevis</i>	n.d.	AJ585764 CAF51388.1	AJ626823 CAF25181.1	
α -2,3-sialyltransferase ST8Sia-I (Slat8A;GD3 synthase) (fragment)	<i>Xenopus laevis</i>	n.d.	AY272056 AAQ16162.1	AY272057 AAQ16163.1	AJ704562 CAG28695.1
α -2,3-sialyltransferase ST6GalNAc V (Slat7E) (fragment)	<i>Xenopus tropicalis</i>	n.d.	AJ626744 CAF25054.1		
α -2,6-sialyltransferase ST6Sia II (Slat6) (fragment)	<i>Xenopus tropicalis</i>	n.d.	AJ626745 CAF22055.1		
α -2,6-sialyltransferase ST6Sia-I (Slat6) (fragment)	<i>Xenopus tropicalis</i>	n.d.	AJ626746 CAF26707.1		
β -galactosamide α -2,6-sialyltransferase II (ST6Gal II) (fragment)	<i>Xenopus tropicalis</i>	n.d.	AJ627628 CAF29496.1		
Sialyltransferase ST6GalNAc V (Slat7E) (fragment)	<i>Escherichia coli K92</i>	2.4--	M88479 AAA24215.1	Q47404	
α -2,6-sialyltransferase SiaD (fragment)	<i>Neisseria meningitidis</i>	n.d.	U75650 AAB53842.1	O06435	
SynE	<i>Neisseria meningitidis</i>	n.d.			
polysialyltransferase (SiaD) (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY234193 AAO85290.1		
SiaD (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY281046 AAP34769.1		
SiaD (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY281047 AAP34767.1		
polysialyltransferase (SiaD) (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY234191 AAO85289.1		
SiaD (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY234194 AAP34770.1		
polysialyltransferase (SiaD) (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY234190 AAO85288.1		
SiaD (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY234193 AAO85291.1		
SiaD (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY234192 AAP34766.1		
SiaD (fragment)	<i>Neisseria meningitidis</i>	n.d.	AY281045 AAP34768.1		
TMEM667	<i>Neisseria meningitidis</i>	n.d.	NG1003142 NP127918		

FIGURE 9, 10 L

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
ORF2	<i>Haemophilus influenzae</i> A2	n.d.	M94855 AAA24979.1		
α -2,3-sialyltransferase	<i>Neisseria gonorrhoeae</i> F62	2.4.99.4	U60664 AAC44539.1 AAE67205.1	P72074	
α -2,3-sialyltransferase	<i>Neisseria meningitidis</i> 406Y, NRCC 4030	2.4.99.4	U60661 AAC44543.1		
NMA1118	<i>Neisseria meningitidis</i> Z2491	n.d.	AL162755 CAB84380.1 NC_003116 NP_283887.1	Q9JUV5	
WaaH	<i>Salmonella enterica</i> SARB25	n.d.	AF519787 AAM82550.1	Q8KS93	
WaaH	<i>Salmonella enterica</i> SARB39	n.d.	AF519788 AAM82551.1		
WaaH	<i>Salmonella enterica</i> SARB57	n.d.	AF519790 AAM82553.1		
WaaH	<i>Salmonella enterica</i> SARB8	n.d.	AF519791 AAM82555.1	Q8KS90	
WaaH (fragment)	<i>Salmonella enterica</i> SARC10Y	n.d.	AF519781 AAM88842.1		
WaaH (fragment)	<i>Salmonella enterica</i> SARC12	n.d.	AF519782 AAM88843.1	Q8KS98	
WaaH (fragment)	<i>Salmonella enterica</i> SARC14I	n.d.	AF519783 AAM88844.1	Q8KS97	
WaaH	<i>Salmonella enterica</i> SARC16II	n.d.	AF519785 AAM88846.1	Q8KS95	

FIGURE 8 10 M

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
WaaH (fragment)	Salmonella enterica SARC4I	n.d.	AF519773 AAM88835.1	Q8KSA3	
WaaH (fragment)	Salmonella enterica SARC5I	n.d.	AF519774 AAM88836.1	Q8KSA4	
WaaH	Salmonella enterica SARC6IIa	n.d.	AF519775 AAM88837.1	Q8KSA2	
WaaH	Salmonella enterica SARC9V	n.d.	AF519776 AAM88838.1	Q8KSA1	
α-D-glucosidase/α-D-glucosaminidase/WaaH	Salmonella enterica SARC9V	n.d.	AF519777 AAM88839.1	Q8KSA0	
α-D-glucosidase/α-D-glucosaminidase/WaaH	Salmonella enterica SARC9V	n.d.	AF519778 AAM88839.1	Q8KSA0	
α-D-glucosidase/α-D-glucosaminidase/WaaH	Salmonella enterica SARC9V	n.d.	AF519779 AAM88840.1	Q8KSA0	
Cst	Campylobacter jejuni 81-176	n.d.	AF305571 AAL09368.1		
α-2,3-sialyltransferase (Cst-III)	Campylobacter jejuni ATCC 43430	2.4.99.-	AF400047 AAK85419.1		
α-2,3-sialyltransferase (Cst-III)	Campylobacter jejuni ATCC 43430	2.4.99.-	AF400048 AAK91725.1	Q93MQ0	
α-2,3-sialyltransferase (Cst-III)	Campylobacter jejuni ATCC 43430	2.4.99.-	AF400049 AAK91726.1	Q93MQ1	
α-2,3-sialyltransferase (Cst-II)	Campylobacter jejuni ATCC 43456	2.4.99.-	AF401528 AAL05990.1	Q93D05	
α-2,3-sialyltransferase (Cst-II)	Campylobacter jejuni ATCC 700297	n.d.	AF216647 AAL36462.1		
α-2,3-sialyltransferase cstIII	Campylobacter jejuni MSC57360	2.4.99.-	AF195055 AAG29922.1		
α-2,3-sialyltransferase cstIII	Campylobacter jejuni MSC57360	n.d.	AF109072 CAB59951		
α-2,3/α-2,8-sialyltransferase II (cstII)	Campylobacter jejuni O:10	n.d.	-AAO98669.1		
α-2,3/α-2,8-sialyltransferase II (cstII)	Campylobacter jejuni O:36	n.d.	AX934427 CAF04167.1		
α-2,3/α-2,8-sialyltransferase II (cstII)	Campylobacter jejuni O:41	n.d.	AX934436 CAF04171.1		
α-2,3/α-2,8-sialyltransferase II (cstII)	Campylobacter jejuni O:41	n.d.	AX934424 CAF04170.1		
α-2,3/α-2,8-sialyltransferase II (cstII)	Campylobacter jejuni OH4384	n.d.	-AAO98670.1		
α-2,3/α-2,8-sialyltransferase II (cstII)	Campylobacter jejuni OH4384	n.d.	-AAT17967.1		
bifunctional α-2,3/2,8-sialyltransferase (Cst-II)	Campylobacter jejuni OH4384	2.4.99.-	AF130984 AAF31771.1		1R07C
bifunctional α-2,3/2,8-sialyltransferase (Cst-II)	Campylobacter jejuni OH4384	2.4.99.-	AX934425 CAF04166.1		1R08A

FIGURE 11 10 N

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
PM1174	<i>Pasteurella multocida</i> PM70	n.d.	AE006157 AAK03258.1 NC_002663 NP_246111.1	Q9CLP3	
Sequence 10 from patent US 6709834	Unknown.	n.d.		-AAT17966.1	
6699705					
Sequence 2 from patent US 6709834	Unknown.	n.d.		-AAT23232.1	
6709834					
Sequence 3 from patent US 6709834	Unknown.	n.d.		-AAT17965.1	
6699705					
Sequence 35 from patent US 6503744 (fragment)	Unknown.	n.d.		-AAO96685.1 -AAS36262.1	
6503744					
Sequence 5 from patent US 6699705	Unknown.	n.d.		-AAT17966.1	
6699705					
Sequence 9 from patent US 6699705	Unknown.	n.d.		-AAO96674.1	
6699705					